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January 5th, 1960

COCOM Document No. 3715.65/4 B

COORDINATING COMMITTEE

RECORD OF DISCUSSION

ON

ITEM 1565 - COMPUTERS, ELECTRONIC

8th December, 1959

Present: Belgium (Luxembourg), Canada, France, Germany, Italy, Japan, Netherlands, United Kingdom, United States.

References: COCOM Documents Nos. 3750, 3700.1 and 5, 3715.00/1, 3715.65/1 to 3, W.P.1565/1, 2 and 3.

1. The CHAIRMAN, in opening the second round of discussion on Item 1565, reminded the Committee that they had to study two widely-differing proposals, one submitted by the United Kingdom Delegation and the other by the United States Delegation, both of which were set out in COCOM Document No. 3715.65/1. The Chairman hoped nevertheless that the Committee would reach speedy agreement, as it would be regrettable if the old definition had to be retained.

2. The UNITED STATES Delegate supported the Chairman's remarks and stated his authorities' view not only that the current definition of Item 1565 should not remain unchanged but that its improvement was an urgent necessity. The Delegate recalled the statement he had made, as set out in COCOM Document No. 3715.65/1, when submitting his authorities' proposal. He then drew the attention of the Committee to two documents (COCOM 3715.65/2 and 3715.65/3) submitted by the United States Government to assist the Committee in its consideration of Item 1565. He told the Committee that the first of these studies was based upon generally available information and especially upon Soviet-published data on the status of Soviet computer production, which, because of its repeated admission of serious production difficulties, was very significant. The second document was based, he said, upon both covert and overt information gathered and evaluated by United States and other computer experts who had visited the U.S.S.R. and studied Soviet computer production. It also contained classified information about United States computer production and use. These two documents showed, according to the United States Delegate, that electronic computers should be embargoed because they met the agreed criteria. They were used primarily for military purposes; they were in short supply in the Soviet Bloc and they contained unique know-how which could help the U.S.S.R. to overcome its serious lag in computer production.

The United States Delegate said that over 4,000 digital computers had been built in his country, most of them more sophisticated than those produced in the U.S.S.R. Today about 2/3 of these computers (by value) were used for military purposes. In the beginning of United States computer development, during the early 1950's, a far greater proportion was used for military purposes. Today the Soviet Union was in a position analogous to that of the United States at that time. It had built only 400 digital computers, and because of the heavy requirements of modern military weapons and warning systems undoubtedly used the overwhelming majority of them for military purposes. This was not surprising, for the Soviet Union had military problems very similar to those of the United States because of its geography and since the levels of scientific knowledge

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in the two countries were roughly similar, the U.S.S.R. followed the same pattern in solving its military problems as had the United States. Moreover, since Soviet civilian use of computers lagged greatly behind that of the Free World and especially the United States, and since two-thirds of the value of digital computers in the United States was devoted to military applications, it must be evident that Soviet use was also predominantly military.

The United States Delegate pointed out that Soviet published statements alone confirmed the opinion of computer experts that a shortage of these crucial instruments existed in the Sino-Soviet Bloc. This was also attested by Soviet efforts to purchase such equipment in the United States and from European producers.

The valuable production know-how gained by Free World firms during years of costly development was also lacking in the Sino-Soviet Bloc. Although agreeing that Soviet theoretical accomplishments were often on a par with those of the Free World, the United States Delegate maintained that there was a critical difference between theoretical knowledge and series production. He recalled, as an example, the case of one internationally known computer manufacturer who had access to the reliable components of the entire Free World and who, despite a superb plan for an advanced computer, had worked for years without yet producing even one working prototype. Under these circumstances, the United States Delegate felt it would be highly unwise to sacrifice the significant advantage now enjoyed by the Free World in the availability of electronic computers.

3. The UNITED KINGDOM Delegate said that his authorities had given careful study to the United States proposal but they found it unacceptable because it would place business computers under embargo. He commended to the Committee the proposal put forward by his Delegation, which, as he had explained in the discussions on the 17th November, provided the embargo rules most appropriate to the case of digital computers, other than those which would remain subject to embargo by Item 11 on the Munitions List. His authorities believed that the analogue computers at present embargoed by Item 1565 could safely be freed.

The Delegate noted that there was abundant evidence of the emphasis currently placed on the development of industrial automation in the U.S.S.R. - a development which was not in conflict with the security interests of the West.

The Delegate then stated that the memorandum submitted by the United States Delegation contained a great deal of very useful and highly interesting information. The United Kingdom Delegation, nevertheless, did not fully share the conclusions reached by the United States Delegation. By way of example, the Delegate asked leave to quote from the Report published by a United Kingdom technical mission which had visited the Soviet Union in May 1959 and had drawn the following conclusions: "Work is in progress in laboratories in the Soviet Union on most of the parts of the field of industrial control system development and on most of the distinctive classes of device that are known to us in process of development in Britain.... There is considerable activity on control in the steel industry, particularly in the development of integrated process control simulators, both to guide the design of multi-variable control systems and also to operate as part of such control systems. Work is also well ahead in telemetering, (for example, as applied to the control of long gas transmission pipelines), and on the control of electric power systems with long transmission lines. This work is mainly on similar lines to work in progress in the United Kingdom

The groups in Britain for research and development in civil applications of automatic control are very much smaller than those now existing in the Soviet Union, and the contrast is still greater in respect of expectations for the near future. We have the impression that in a few years the

application of automatic control in Soviet industry will have overtaken that in the United Kingdom..... There is little evidence at present on which to judge how good the Soviet engineers will prove to be in this further stage; but it is acknowledged that their present level of achievement in basic theoretical work is high, and in other fields initiative has not been lacking....."

The Delegate stated further that while the British team was in the Soviet Union they had encountered a similar mission from the United States who had expressed the following view: "The U.S.S.R. are at the same level of logical design and organisation inside the computer as the USA. At the same time we do not consider that we have seen any development idea that we should like to exploit in the USA."

4. The GERMAN Delegate said he had listened with great interest to the statements made by the United States and United Kingdom Delegates. He felt that the divergencies of view stemmed from the difficulty of establishing cut-offs as between the strategic applications of computers and their civilian applications. He noted that the United States document which had been quoted did not refer to automatic control in industry. The Delegate stated that his authorities would hope for a precise and unequivocal definition based on technical characteristics, so that it would be possible to recognise at once which equipment was under embargo and which free, it being understood that equipment designed for automation should be free.

5. The FRENCH Delegate fully shared the United Kingdom Delegation's view as to the value of the Soviet equipment and also the United Kingdom experts' view, which recognised the United States advance on the U.S.S.R. but at the same time admitted that Europe lagged behind the U.S.S.R. The Delegate asked why the Committee had to retain an embargo on equipment which was technically less up to date than the Soviet equipment.

6. The CHAIRMAN considered that it would be advisable to keep separate on the one hand the aspect "theoretical development", whether in the U.S.S.R. or in the West, and, on the other, the aspect "Soviet Bloc shortage where the production of computers is concerned".

7. The FRENCH Delegate emphasised that the Committee's reviews were based on three criteria and that he for one did not consider that, in demonstrating that the Russians were at least as far advanced as the Free World, the Committee went beyond the boundaries of the problem they had to resolve. The Delegate left it to his expert to refute some of the arguments put forward by the United States Delegation in the document to which they had referred. As to the strategic part played by computers, while recognising that some categories of computers were designed essentially for military equipment and that it was quite normal that such types of computer should be under embargo, the French Delegate nevertheless stressed that in fields as varied as those of automation of machine-tools, automatic railway traffic control, weights and measures, research on stability of dyeing processes, and - a peaceful use above all others - the development of colour films, the U.S.S.R. relied for their purely civilian needs on the astonishing possibilities of computers. Such types of special computers, however, needed to be completely recast before they could be used for other purposes, and even if the effort were attempted, they could not operate in the climatic and mechanical conditions imposed upon war material. For those reasons, the French Delegation would be unable to accept the United States proposal, which passed over in silence the civilian uses of these machines.

8. The UNITED STATES Delegate expressed the wish to answer some of the remarks just made. In the first place, he hoped that no confusion existed as between what was covered by the Munitions List and what was interesting the Committee at present, namely computers which could be used for two purposes, and which operated in normal climatic conditions. With reference to the United States experts who had visited the Soviet Union, the Delegate explained that all of them were University professors, and that, moreover, they had not visited any computer factory but only a certain number of works using this equipment. Finally, as to the comparisons which had been drawn between European and Soviet technology and production, the Delegate

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emphasised that the United States experts had stated that the West had nothing to learn from the Soviet Bloc and that the latter, on the contrary, were endeavouring to import all the European equipment they could obtain.

9. The GERMAN Delegate said his authorities had welcomed the United States proposal because it constituted a step towards a clear and precise definition likely to enable control departments to determine without too much difficulty what was covered by the embargo and what was not. They noted that the United States proposal covered all types of computers manufactured in Germany during the last ten years. The Delegate had observed also that the United States Delegation considered as strategic what other Delegations believed to be devoid of any strategic significance. He noted lastly that, starting from the same facts, the United States Delegation and the United Kingdom Delegation reached different conclusions. The German Delegate stated that no one denied the essential part played by computers in the field of guided missiles. The United States recognised that the nuclear programme of the Russians was as advanced as their own, i.e., much more advanced than the European programme. With reference to the United Kingdom proposal, the German Delegate stated that for countries which had developed their own production later, a definition based on a time cut-off was not very appropriate. The Delegate believed that the solution to the problem might be looked for in the direction of "operating speed". In the meantime, the current definition would be retained, the Committee recognising that it was not satisfactory and that the question merited fresh study. The German Delegate also recalled that in the previous July the German Delegation had proposed to the United States Delegation a discussion on this item.

10. The ITALIAN and NETHERLANDS Delegations associated themselves with the German proposal to adjourn discussion on Item 1565 until Governments had had the time required to submit new proposals. The Italian Delegate added that his authorities considered that the United States proposal, in endeavouring to construct a technical definition (see COCOM Document No. 3715.65/1) constituted the most reasonable method of approaching the problem.

11. The CHAIRMAN stated that the conclusion to be drawn from the discussion might be along the following lines: "The definition of Item 1565 remains as at present, but the Committee considers that this is a provisional solution, and that in the course of next year, without waiting for the 1960 review, they should make a special effort to reach a unanimously agreed solution based on technical data which - to use the German Delegate's expression - could be followed without ambiguity by the departments responsible for applying the control system".

12. The UNITED STATES Delegate agreed with the Chairman's summary. He wished to assure his German colleague that the definition proposed by the United States Delegation had not been designed to embargo all computers manufactured in Germany. Referring to the divergencies in the evaluating of Soviet Bloc production, the Delegate stated that, as far as the United States were concerned, the figures he had quoted were based on information which was more or less confidential. The United States Delegate continued to believe that the Bloc was a long way behind the Western world both as regards the quality and the level of their production. The Delegate had been happy to take note of the statements by the German and Italian Delegations regarding the United States proposal. Before the debate was brought to a close, the Delegate wished in conclusion to draw the attention of Governments to the consequences of retaining the current definition. He felt that, pending the working out of a new definition, the Committee should, with all the emphasis at their command, urge the various Governments to be extremely prudent, and not to seek to benefit from the retention of the current definition in order to increase their exports to the Bloc and thus contribute to the strengthening of the Soviet computer potential.

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13. The UNITED KINGDOM Delegate stated that his authorities still thought that the proposal they had submitted represented an undeniable progress as compared with the present situation. They would endeavour once again to examine the matter from the technical point of view, while expressing the hope that their original proposal would not be abandoned.

CONCLUSION: The COMMITTEE agreed provisionally to retain the current definition of Item 1565, until such time as it would be possible to work out a new definition on the basis of the various proposals already submitted or to be put forward in the near future.

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